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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/784,273

02/24/2004

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25944 7590 10/27/2008

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P.O. BOX 320850

ALEXANDRIA, VA 22320-4850

EXAMINER

CLARK, DAVID J

ART UNIT

PAPER NUMBER

3628

MAIL DATE

DELIVERY MODE

10/27/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/784,273	<b>Applicant(s)</b> OBAYASHI ET AL.	
	<b>Examiner</b> DAVID J. CLARK	<b>Art Unit</b> 3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 27-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Status of Claims**

1. This action is in reply to the Request for Continued Examination filed on 6 August 2008.
2. Claims 27, 31 and 32 have been amended.
3. Claim 1-26 and 42-43 have been canceled from previous actions.
4. Claims 27-41 are currently pending and have been examined.

### ***Claim Rejections - 35 USC § 112***

5. The amendments to claims 27 and 31 are acceptable. The previous rejections of claims 27-41 are hereby withdrawn. The Examiner thanks the Applicant for correcting these minor deficiencies.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. Claims 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fussey et al. (US PGP 2004/0074682 A1) in view of Severinsky et al. (US 6,554,088 B2).

**Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

**Claim 27:**

Fussey et al., as shown, discloses the following limitations:

*A method for controlling a vehicular electric system having a plurality of power sources that supplies power to an onboard electrical load and an onboard battery, wherein the plurality of power sources includes a generator driven by an engine of a vehicle (see at least paragraph 0002), the method comprising:*

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- *obtaining and processing information on a power generation cost that is a cost of generating unit power by each power ~~source~~; source.* (see at least figure 2 , paragraphs 0006, 00012, 0032, and 0039).
- *adjusting a power supply distribution of the plurality of power sources and a receiving power rate of the onboard electrical load or the onboard battery in such a manner that a consumed power cost is reduced, wherein the adjusting is based on the information and performed by prioritizing a power supply from one of the plurality of power ~~sources~~, ~~the one~~ sources which has a ~~low~~ lowest power generation ~~cost~~. cost of the plurality of power sources.* (see at least paragraphs 0029-0031, 0038-0039, 0042-0043, and 0050).

Fussey et al. does not disclose the following limitations, but Severinsky et al. however, as shown, does:

- the information further including information on an energy cost of the onboard battery based on charge and discharge histories of the onboard battery.: (see at least column 44, lines 37-39, "the microprocessor builds up a detailed historical record of the vehicle's usage pattern, [charge and discharge history] from which an optimized control strategy may be derived." ).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Fussey et al. with the technique of Severinsky et al. in order to "provide an improved vehicle that operates on fuel now widely available and uses batteries already well understood and widely available, so that the operator need not learn new driving techniques, deal with new fuel supply arrangements, nor be obliged to be attentive to maintenance of batteries employing complex new technologies.", (Severinsky et al., column 15, lines 62-67).

#### **Claims 28- 37:**

Fussey et al. in view of Severinsky et al., as shown, discloses the limitations of claim 27 above.

Moreover, Fussey et al. discloses the following limitations:

(Claim 28) *The method for controlling the vehicular electric system according to claim 27,*

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- *wherein the adjusting power supply distribution of the plurality of power sources and the receiving power rate of the onboard electrical load or the onboard battery in such a manner that the consumed power cost is reduced is performed based on the power generation cost of each power source and available power supply from each power source (see at least paragraphs 0029-0031, 0038-0039, 0042-0043, and 0050).*

(Claim 29) *The method for controlling the vehicular electric system according to claim 27, further comprising:*

- *controlling a power generation of each power source based on the power supply distribution (see at least paragraphs 0029-0031, 0038-0039, 0042-0043, and 0050); and*
- *outputting an instruction signal to a device that supplies power to the plurality of power sources for controlling an output of the device based on the power supply distribution (see at least paragraphs 0029-0031, 0038-0039, 0042-0043, and 0050).*

(Claim 30) *The method for controlling the vehicular electric system according to claim 27, further comprising:*

- *determining the power supply distribution of the plurality of power sources to the onboard battery based on the information (see at least paragraphs 0002 and 0012-0018).*

(Claim 31) *The method for controlling the vehicular electric system according to claim 30, wherein the power supply from the one of the plurality of power ~~sources, the one~~ sources which has the ~~low-lowest~~ power generation cost, cost of the plurality of power sources, is prioritized when the onboard battery is charged (see at least paragraphs 0002 and 0012).*

(Claim 32) *The method for controlling the vehicular electric system according to claim 30, wherein*

- *the plurality of power sources ~~include~~ includes an engine of a hybrid vehicle and a regenerative braking system (see at least paragraphs 0002 0029, and 0035).*

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(Claim 33) *The method for controlling the vehicular electric system according to claim 32, wherein the power supply of regenerative electric power supplied by the regenerative braking system is prioritized when the onboard battery is charged (see at least paragraphs 0035).*

(Claim 34) *The method for controlling the vehicular electric system according to claim 30, wherein*

- *the adjusting the power supply distribution for supplying power to the onboard battery is performed in accordance with a difference between the power generation cost of the onboard battery as one of the power sources and the power generation cost of another power source that supplies power to the onboard battery (see at least paragraphs 0002, 0006, 0012, 0029-0031).*

(Claim 35) *The method for controlling the vehicular electric system according to claim 34,*

- *wherein the adjusting the power supply distribution for supplying power to the onboard battery is performed based on the difference between the costs and a state of charge of the onboard battery (see at least paragraphs 0003, 006, 0012, 0029, 0040).*

(Claim 36) *The method for controlling the vehicular electric system according to claim 35,*

- *wherein the state of charge of the onboard battery is determined using an amount of power charged in the onboard battery and a variation in the amount of power (see at least paragraphs 0029, 0040, and 0042).*

(Claim 37) *The method for controlling the vehicular electric system according to claim 30, further comprising:*

- *calculating and preferentially distributing a part of power supplied from the power sources to the electrical load (see at least paragraphs 0002 and 0029); and*

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- *calculating and distributing the other part of power to the onboard battery, the other part supplied from the power sources after the distribution to the electrical loads (see at least paragraph 0002).*

**Claim 38:**

Fussey et al. in view of Severinsky et al., as shown, discloses the limitations of claim 27 above.

Fussey et al. does not disclose the following limitations, but Severinsky et al. however, as shown, does:

- *transferring power between the vehicle electric system and another vehicle electric system in such a manner that voltage of the another vehicle electric system is converted to voltage of the vehicle electric system, wherein the voltage of the another vehicle electric system is different from the voltage of the vehicle electric system (see at least column 35, lines 51-67 through column 35, lines 1-4).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Fussey et al. with the technique of *transferring power between the vehicle electric system and another vehicle electric system in such a manner that voltage of the another vehicle electric system is converted to voltage of the vehicle electric system, wherein the voltage of the another vehicle electric system is different from the voltage of the vehicle electric system* as taught by Severinsky et al. for the advantage of allowing the transfer of voltage between two vehicles.

10. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fussey et al. in view of Severinsky et al. as applied to claim 27 above, and further in view of Shioriri et al. (US 6,201,312).

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**Claim 39:**

Fussey et al. in view of Severinsky et al., as shown, discloses the limitations of claim 27 above.

Moreover, Fussey et al. as shown, discloses the following limitations:

- *obtaining the information concerning a power generation cost of the generator driven by the engine of the vehicle* (see at least paragraphs 0006, 0012, 0037-0039)

Fussey et al. in view of Severinsky et al. does not disclose the following limitations, but Shioriri et al. however, as shown, does:

- *based on engine efficiency at an engine operating point* (see at least figures 10 and 11; column 3, lines 1-37, and column 10, lines 27-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Fussey et al. in view of Severinsky et al. with the technique of Shioriri et al. for the advantage of determining the optimum setting for the engine that will minimize the fuel consumption of the hybrid car.

**Claim 40:**

Fussey et al. in view of Severinsky et al. and further in view of Shioriri et al., as shown, discloses the limitations of claim 39 above.

Fussey et al. in view of Severinsky et al. does not disclose the following limitations, but Shioriri et al. however, as shown, does:

- *correcting the power generation cost based on information of generator efficiency* (see at least column 2, lines 60-63; column 11, lines 12-16; The energy efficiency of the car is improved; therefore, the fuel economy is improved and power generation cost is reduced.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Fussey et al. in view of Severinsky et al. with the technique of Shioriri et al. for the advantage of determining the optimum setting for the engine that will minimize the fuel consumption of the hybrid car.

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**Claim 41:**

Fussey et al. in view of Severinsky et al. and further in view of Shioriri et al., as shown, discloses the limitations of claim 39 above. Moreover, Fussey et al., as shown, discloses the following limitations:

- *wherein the power generation cost of the generator driven by the engine of the vehicle is determined based on an increase in consumed fuel for driving the engine due to the power generation (see at least paragraphs 0006, 0012, 0013, and 0017).*

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***Conclusion***

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **David J. Clark** whose telephone number is **571.270.3938**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **JOHN W. HAYES** can be reached at **571.272.6708**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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